

Claims

1.-14. (cancelled)

15. (new) A magnetically inductive flow meter, comprising:

a measuring tube;

an electrode array with electrodes disposed on opposite sides of the measuring tube transversally to a direction of flow through the measuring tube; and

a coil arrangement having at least one saddle coil whose axis extends transversally to the direction of flow and transversally to the electrode array and which has four sides, two first sides extending parallel to the direction of flow and two second sides extending in a circumferential direction of the measuring tube, wherein

a magnetically conductive element is arranged between each first side and the measuring tube, wherein the magnetically conductive element is configured and arranged to take up a first part of a magnetic flux such that a second part of the magnetic flux existing in an area surrounded by the saddle coil bypasses the element.

16. (new) The flow meter according to claim 15, wherein the element proceeds from an area on an inner edge of the first coil side and terminates between the first coil side and the measuring tube.

17. (new) The flow meter according to claim 15, wherein the element has an angled section abutting to the first coil side from inside.

18. (new) The flow meter according to claim 16, wherein the element has an angled section abutting to the first coil side from inside.

19. (new) The flow meter according to claim 17, wherein the section is secured either to the coil side or to the measuring tube.

20. (new) The flow meter according to claim 15, wherein the element is embodied as U-shaped with two arms and attached to the first coil side from inside.

21. (new) The flow meter according to claim 16, wherein the element is embodied as U-shaped with two arms and attached to the first coil side from inside.

22. (new) The flow meter according to claim 17, wherein the element is embodied as U-shaped with two arms and attached to the first coil side from inside.

23. (new) The flow meter according to claim 19, wherein the element is embodied as U-shaped with two arms and attached to the first coil side from inside.

24. (new) The flow meter according to claim 20, wherein the arms are pre-stressed toward each other.

25. (new) The flow meter according to claim 20, wherein the arm between the first coil side and the measuring tube is longer transversally to the direction of flow than the other arm.

26. (new) The flow meter according to claim 15, wherein the element extends over the length of the first coil side in the direction of flow.

27. (new) The flow meter according to claim 15, wherein the element has a recess between its ends in the direction of flow.

28. (new) The flow meter according to claim 15, wherein the element has an undulating surface.

29. (new) The flow meter according to claim 15, wherein the element is made of magnetically soft iron.

30. (new) The flow meter according to claim 15, wherein the element is made of magnetically conductive plastic.

31. (new) The flow meter according to claim 15, wherein the element is encapsulated with the measuring tube.

32. (new) The flow meter according to claim 15, wherein the element is extended transversally to the direction of flow such that a measuring error will be minimal.

33. (new) A magnetically inductive flow meter, comprising:  
a measuring tube;  
an electrode array with electrodes disposed on opposite sides of the measuring tube transversally to a direction of flow through the measuring tube; and  
a coil arrangement having at least one saddle coil whose axis extends transversally to the direction of flow and transversally to the electrode array and which has four sides, two first sides extending parallel to the direction of flow and

two second sides extending in a circumferential direction of the measuring tube, wherein

a magnetically conductive element is arranged between each first side and the measuring tube, wherein the magnetically conductive element is configured and arranged to guide a first part of a magnetic flux, wherein a second part of the magnetic flux existing in an area surrounded by the saddle coil is not influenced by the element.